

## INTERNATIONAL SEARCH REPORT

 International Application No  
 PCT/US2005/007113

 A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 H04L27/00 H04L27/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/036896 A (TROPIAN INC; SANDER, BRIAN; SANDER, WENDELL, B; SCHELL, STEPHAN, V) 1 May 2003 (2003-05-01) page 2, line 26 - page 3, line 7 page 5, line 23 - page 6, line 6 page 8, line 15 - page 9, line 22 page 12, line 9 - page 14, line 27 page 17, line 4 - page 19, line 1 ----- -/--	1-25

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \* & \* document member of the same patent family

Date of the actual completion of the international search

21 July 2005

Date of mailing of the international search report

01/08/2005

Name and mailing address of the ISA

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>BODE P ET AL: "Combined GMSK and 8PSK modulator for GSM and EDGE"  ISCAS 2003. PROCEEDINGS OF THE 2003 IEEE INTERNATIONAL SYMPOSIUM ON CIRCUITS AND SYSTEMS. BANGKOK, THAILAND, MAY 25 - 28, 2003, IEEE INTERNATIONAL SYMPOSIUM ON CIRCUITS AND SYSTEMS, NEW YORK, NY : IEEE, US,  vol. VOL. 3 OF 5,  25 May 2003 (2003-05-25), pages III-614, XP002318484  ISBN: 0-7803-7761-3  Abstract  1. Introduction  2. An overview of GMSK and 8PSK Modulation (specially last paragraph)  4. Multislot Operation  5. Burst Shaping with I/Q signals</p>	1-25
X	<p>EP 0 881 806 A (ALCATEL)  2 December 1998 (1998-12-02)</p> <p>column 1, line 5 - line 40  column 3, line 3 - column 5, line 3</p>	1-4, 6-10, 12-17,25
X	<p>EP 0 397 077 A (FUJITSU LIMITED)  14 November 1990 (1990-11-14)</p> <p>abstract  column 4, line 44 - column 5, line 10  column 6, line 16 - column 7, line 17  column 9, line 57 - column 10, line 16</p>	1,2, 5-15,18, 21-25
E	<p>WO 2005/055541 A (KONINKLIJKE PHILIPS ELECTRONICS N.V; PHILIPS INTELLECTUAL PROPERTY &amp; S) 16 June 2005 (2005-06-16)  abstract  page 1, line 13 - line 22  page 5, line 24 - page 9, line 17</p>	1-25
P,X	<p>WO 2004/021659 A (PHILIPS INTELLECTUAL PROPERTY &amp; STANDARDS GMBH; KONINKLIJKE PHILIPS EL) 11 March 2004 (2004-03-11)  abstract  page 1, line 6 - page 3, line 30  page 7, line 25 - page 8, line 16  page 9, line 18 - page 10, line 20  page 11, line 28 - page 12, line 3</p>	1-25

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/007113

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03036896	A	01-05-2003	US 2004208157 A1 EP 1438817 A2 TW 223927 B WO 03036896 A2	21-10-2004 21-07-2004 11-11-2004 01-05-2003
EP 0881806	A	02-12-1998	AU 6804298 A CA 2236686 A1 CN 1201303 A DE 69829096 D1 EP 0881806 A2 JP 11041302 A SG 71793 A1	03-12-1998 29-11-1998 09-12-1998 31-03-2005 02-12-1998 12-02-1999 16-10-2001
EP 0397077	A	14-11-1990	JP 2086037 C JP 2298139 A JP 7114420 B CA 2016630 A1 DE 69030402 D1 DE 69030402 T2 EP 0397077 A2 US 5193222 A	23-08-1996 10-12-1990 06-12-1995 12-11-1990 15-05-1997 14-08-1997 14-11-1990 09-03-1993
WO 2005055541	A	16-06-2005	WO 2005055541 A1	16-06-2005
WO 2004021659	A	11-03-2004	AU 2003255985 A1 EP 1537709 A1 WO 2004021659 A1	19-03-2004 08-06-2005 11-03-2004

# PATENT COOPERATION TREATY

REC'D 28 JUL 2005

WIPO

PCT

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

22/9

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2005/007113

International filing date (day/month/year)  
04.03.2005

Priority date (day/month/year)  
04.03.2004

International Patent Classification (IPC) or both national classification and IPC  
H04L27/00, H04L27/20

Applicant  
QUALCOMM INCORPORATED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US2005/007113

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-25
Inventive step (IS)	Yes: Claims	
	No: Claims	1-25
Industrial applicability (IA)	Yes: Claims	1-25
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VI Certain documents cited**

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1. Certain published documents (Rules 43bis.1 and 70.10)

and /or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

**see form 210**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

Reference is made to the following documents:

- D1: WO 03/036896 A
- D2: BODE P ET AL: "Combined GMSK and 8PSK modulator for GSM and EDGE"  
ISCAS 2003. PROCEEDINGS OF THE 2003 IEEE INTERNATIONAL  
SYMPOSIUM ON CIRCUITS AND SYSTEMS. BANGKOK, THAILAND, MAY 25-  
28, 2003, IEEE INTERNATIONAL SYMPOSIUM ON CIRCUITS AND SYSTEMS,  
NEW YORK, NY: IEEE, US, vol. VOL. 3 OF 5, 25 May 2003 (2003-05-25), pages  
III-614
- D3: EP-A-0 881 806
- D4: EP-A-0 397 077
- D5: WO 2005/055541 A
- D6: WO 2004/021659 A

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. Claim 1 does not meet the requirement of novelty, Article 33(2) PCT.
- 1.1 Document D1 discloses, in terms of the wording of claim 1, a method of effecting a smooth transition between adjacent digital information bursts transmitted in different modulation formats (see, e.g. page 2, line 26 to page 3, line 7), the method comprising:
  - selecting a first code sequence for a first digital symbol burst to be transmitted, which first sequence comprises a set of end symbols with a first particular symbol pattern;
  - selecting a second code sequence for a second digital symbol burst to be transmitted after the first digital symbol burst, which second sequence comprises a set of start symbols with a second particular symbol pattern (see, e.g. page 5, line 23 to page 6, line 6);
  - modulating the first digital symbol burst in a first modulation format;
  - modulating the second digital symbol burst in a second modulation format different than the first modulation format (see, e.g. page 14, lines 20-27); and
  - transmitting the modulated first and second digital symbol bursts, the transmission of the second digital symbol burst starting upon completion of the transmission of the first

digital symbol burst at an instant so selected that transmission of the end set of bits of the first code sequence is synchronized in time with the start set of bits of the second code sequence (see, e.g. page 8, line 15 to page 9, line 22; page 12, line 9 to page 14, line 27; page 17, lines 10-24).

2. All the features of claim 1 are also disclosed in D2, D3 and D4 (see citations in the International Search Report).

Therefore, claim 1 also lacks novelty vis-à-vis D2, D3 or D4.

3. Independent apparatus claim 10 comprises the same features as method claim 1 but in terms of apparatus features. Therefore, the objection of lack of novelty (documents D1-D4) is also applied to this claim.
4. Independent claims 16 (method) and 17 (apparatus) comprise the same features as claims 1 and 10 and additionally the minimization of the respective differences between the first and second phases and the first and second amplitudes. Independent claim 18 discloses a guard period separating the bursts of the first modulation of the burst of the second modulation and the guard symbols comprising at least one symbol of the first modulation and at least one symbol of the second modulation.

As these features are also disclosed by D1, D2 and D3 (for claims 16 and 17) and by D1, D2 and D4 (for claim 18) (see citations in the International Search Report), claims 16, 17 and 18 do not meet the requirements of novelty.

5. Moreover, it should be noted that even if novelty of claims 1, 10 and 16-18 could be argued, based on minor differences between the features of these claims and those disclosed in the cited prior art, the subject-matter of the independent claims would not involve an inventive step, Article 33(3) PCT, having regard to the disclosure of D1-D4.
6. The dependent claims do not contain any additional feature which, in combination with the independent claims, meet the requirements of novelty and inventive step. All these features are at least known from D1 or D2 cited in the I.S.R.



**Re Item VI**

**Certain documents cited**

Certain published documents (Rule 70.10)

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
WO2005/055541	16.06.2005	24.11.2004	04.12.2003
WO2004/021659	11.03.2004	14.08.2003	28.08.2002

1. The subject-matter of documents D5 and D6 appears novelty destroying at least for the subject-matter of the independent claims and would therefore be relevant in any subsequent European procedure.

**Re Item VII**

**Certain defects in the international application**

1. The independent claims are not in the two-part form as required by Rule 6.3(b) PCT, whereby the features already disclosed in document D1 should have been placed in the preamble.
2. Reference signs in parentheses should have been inserted in the claims to increase their intelligibility (Rule 6.2(b) PCT). This applies to both the preamble and characterising portion.
3. To meet the requirements of Rule 5.1(a)(ii) PCT, the documents D1 and D2 should have been identified in the description and their relevant content should be briefly indicated.
4. The sentence relating to incorporate documents by reference (page 1, paragraph 0001) should have been deleted (PCT Guidelines C-II, 4.18).
5. The vague and imprecise statement in the description on page14, paragraph 0061

("spirit of the invention") implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, III-4.3a).

**Re Item VIII**

**Certain observations on the international application**

1. Claim 25 contains reference to the drawings. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here. Furthermore, it claims a method and an apparatus simultaneously rendering the category of the claim unclear, Article 6 PCT. Claim 25 should have been omitted.
2. Although claims 1 and 16 (method claims) and 10, 17 and 18 (apparatus claims) have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

Hence, claims 1, 10, 16, 17 and 18. do not meet the requirements of Article 6 PCT.

- 2.1 An amended set of claims defining the relevant subject-matter in terms of a single independent claim in each category followed by dependent claims covering features which are merely optional (Rule 6.4 PCT) should have been filed.
3. The expression "closely matched" used throughout the claims is vague and unclear and leave the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of the claims unclear, Article 6 PCT.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

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